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Burris et al.

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[54] MINIATURIZED HEADSET FOR TWO-WAY VOICE COMMUNICATION

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[58] Field of Search 179/111 E, 121 D, 121 R, 179/180, 182 R, 182 A, 156 A, 156 R, 107 A; 379/430, 433; 381/183, 187, 68.6

[56] References Cited

U.S. PATENT DOCUMENTS

1,614,987 1/1927 Langenbeck et al. .
1,893,143 1/1933 Koch .
1,953,437 4/1934 Schier .
2,487,038 11/1949 Baum .
2,489,277 11/1949 Faralla .
3,440,365 4/1969 Bryant et al. 379/439
3,524,951 8/1970 Bernardi et al. 379/430
3,586,794 6/1971 Michaelis .
3,610,841 10/1971 Hutchings 379/430
3,691,319 9/1972 Bee 379/430
3,781,492 12/1973 Cragg et al. 379/430
3,819,860 6/1974 Miller .
3,862,378 1/1975 Norris 379/430

3,934,100 1/1976 Harada 181/135
4,020,297 4/1977 Brodie 379/430
4,273,969 6/1981 Foley et al. 379/430
4,375,016 2/1983 Harada .
4,403,120 9/1983 Yoshimi 381/187
4,420,657 12/1983 Larkin 379/430
4,443,668 4/1984 Warren 381/154
4,564,955 1/1986 Birch et al. 381/68.7
4,588,867 5/1986 Konomi 379/430

FOREIGN PATENT DOCUMENTS

0143383 10/1981 European Pat. Off. .
1363723 8/1974 United Kingdom .
2078057 5/1981 United Kingdom .
2082020 6/1981 United Kingdom .
2141903 1/1985 United Kingdom .

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[57] ABSTRACT

A miniaturized headset for two-way voice communication is supported and positioned by the notch in the concha portion of a wearer's ear. The headset is reversible and may be worn on either the left or right ear. The earpiece includes sound output ports located therein to provide for alignment of a port with the auditory canal of either of the headset wearer's ears. The earpiece is disposed within the concha of the wearer's ear and outside the auditory canal.

17 Claims, 12 Drawing Figures

